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Telephony.

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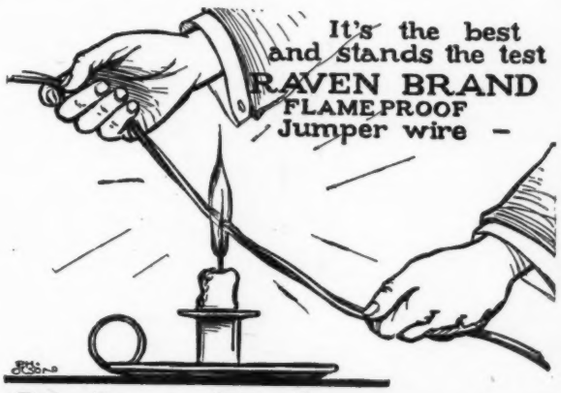

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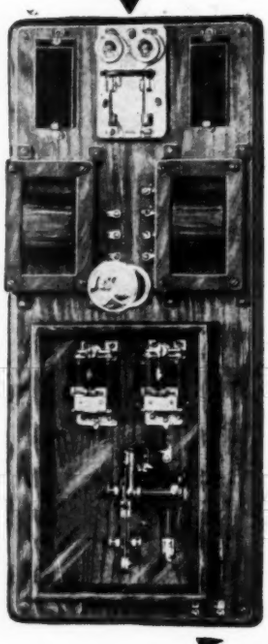

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Telephony.

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An Annoying Question.

It was at a political mass meeting and the speaker was telling how the people's rights would be protected if the party he represented were retained in office.

"Our candidate for President formulated the policy of compelling big business to correct its own abuses where abuses existed," said the spell-binder. "The Department of Justice has been coldly just and absolutely relentless in the prosecution of criminal interests and individuals, but it has taken firm yet friendly counsel with interests whose practices were legitimate. Not only has this been a direct benefit to the country at large, which has been protected from predatory short cuts by great interests, but it has placed these interests themselves on the sure, safe foundation of justice, right and fair dealing, and changed many a short-sighted, get-rich-quick policy to an enduring soundness which is immune from attack through its very qualities of fairness and clean methods."

"I'd like to ask a question right here," interrupted a voice from the audience. "Where was the Bell-Western Electric telephone combine while this was going on?"

And then somebody turned off the lights!

Speaking of Presidential Politics.

These are the days when the American mind is turned toward the making of a president. First at Chicago and then at St. Louis, there was much commotion and a weary waste of oratory incident to the manufacture of presidential candidates, and now the campaign is on for the election. But it comes but once in four years and this year has furnished a pleasant diversion from the horrors of European war. Besides, presidential politics is, in a way, an institution of our government.

Less noisily, for obvious reasons, another presidential campaign is being waged, but it is, however, of great importance to the telephone industry. We refer to the presidency of the American Telephone & Telegraph Co. Of course, the Bell corporation is not quite as big as the United States government, although some persons not a thousand miles from 15 Dey street would have us think so. It is, of course, a sizable concern, and the identity of its president is a matter of no small importance.

At present, as we all know, the head of the Bell organization is Theodore N. Vail, the man who believes the Bell has an absolute right from heaven above to a monopoly of the telephone operating and manufacturing business. He has three vice-presidents at his elbow—Union N. Bethell, N. C. Kingsbury and R. W. Devonshire. Mr. Vail is no longer young. Hale and hearty though he is, it will not be long before, as a matter of course, he will have to pass the crown to another.

Who is to succeed him? That is the question which is being quietly discussed whenever a crowd of Bell officials gather all over the country. Naturally, the gossip is carried on in whispers, for it is neither good taste, nor good policy, to talk very carelessly about such a matter while Theodore N. Vail is still on the job. T. V. is like T. R. in that he doesn't relish promiscuous gossip about who is to succeed him as the "boss of the works." But the gossip goes on just the same, even if it is murmured in stage whispers in odd corners.

There was a time, not so long ago, when it was believed Mr. Kingsbury was being groomed for the presidency of the Bell company. He had been given the role of "chief pacifier" in the work of treating with the Independent telephone interests which had strewn so many rocks in the Bell pathway. At that time the Bell was scared blue over government ownership. Its leaders recognized the fact that the Independents wielded a political power infinitely greater than the Bell could muster, and they decided to cultivate the good will of the opposition. Mr. Kingsbury was the intermediary, and his

followers in the Bell organization magnified his success in the peace negotiations and told each other that he was surely the heir apparent to the Dey street throne. His manipulations at Washington, the acceptance of the Kingsbury commitment by the Department of Justice, and other incidents that brought him prominence, contributed to send his presidential stock up several notches.

But the Bell organization also has an "old guard" which is even more powerful than that of the Republican party. When the Kingsbury gossip passed the amusing stage, they took a hand in the proceedings with the result that the "chief pacifier" plainly felt the weather was clouding up. His efforts to soothe the opposition and yet surrender none of the Bell advantage, injured his chances both ways. They aroused the secret animosity of the old guard of the Bell camp, and finally were weighed and found wanting by the Independents. Most peacemakers catch Hades from both sides, and it was Mr. Kingsbury's misfortune to have at least one of the belligerents come to believe that he was not toting fair.

The upshot of the situation is that Union N. Bethell is now considered the leading candidate for president of the American Telephone & Telegraph Co. He bears the title of senior vice-president, because, it is said, the big men in the Bell organization, in order to head off Kingsbury, insisted that Bethell be thus designated. If seniority counts for anything, they were determined to make it as hard as possible for any rival to surmount that obstacle.

At that, it is said that Kingsbury is more popular among the rank and file of the Bell organization that Bethell. Kingsbury is considered more urbane and courteous. He is less dictatorial and rules with a gentler hand. Possibly that is why he was selected to negotiate with the Independents. His diplomacy in this direction probably has ruined his chances for the Bell presidency. It gave him a prominence that made him a shining mark for the "old guard" who did not want him promoted.

What is equally important, the men in the Independent field no longer accept his commitments and promises at their face value. In fact, they class them as plain "bunk." Moreover, they have discovered that Mr. Kingsbury cannot deliver the goods or fulfill his promises because his own company won't back him up. At least, that is the view of those who have negotiated with him in regard to toll contracts. It is a pathetic case, and proves again that "Honesty is the best policy."

Proceedings Before Commissions, Courts and Councils

Discussions and Rulings of State Bodies Having Supervision Over Telephone Companies, Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchises, Rates and Service

Idaho Ruling on Mutual Telephone Company.

That a mutual telephone company cannot claim exemption from the provisions of the public utilities act and that it must, therefore, first secure from the commission a certificate of public convenience and necessity before it proceeds with the construction of a telephone line, is the substance of a ruling recently handed down by the Idaho Public Utilities Commission. This decision is said to be the first of its kind, construing the relationship of a mutual public service company to the public utilities commission, since the enactment of the Idaho public utilities law.

The ruling was made in the case of the Mountain States Telephone & Telegraph Co. vs. the Project Mutual Telephone & Electric Co. of Rupert, Idaho. The Mountain States company complained that the Mutual company had begun construction of a telephone line, plant and system at Rupert without the authority of the public utilities commission, and that such construction work constituted an invasion in its territory, and that its competitor had not secured a certificate giving it authority to build. In reply the Project Mutual company denied the allegation of the Mountain States company, and set forth "that it is a mutual company supplying telephone connection for its regular subscribed members who are stockholders of said company, and no other, and that it does not do business for compensation."

This allegation and answer clearly raised the question of a mutual public service corporation being exempt from the jurisdiction of the commission. Section 48 of the present public utilities act was directly involved. Provision A of this section says:

"No street railroad corporation, gas corporation, electrical corporation, telephone corporation or water corporation shall henceforth begin the construction of a street railroad, or of a line, plant or system or of any extension of such street railroad or line, plant or system, without having first obtained from the commission a certificate that the present or future public convenience and necessity require or shall require such construction."

In its order and opinion the commission says among other things: "The public utilities act applies to public utilities and public services therein described, and to this commission. The use of a public utility as applying in this state is a public use furnished for compensation within this state, and it is subject to the control, jurisdiction and regulation of this commission, and if such public utility is of a class specified in section 48, above quoted, it is, of course, subject to the provisions of said section.

"It is clear from the record in this case that the construction and operation of defendant's telephone line is not incident to any other business carried on by the defendant. The defendant, as far as the issues in this case are concerned, was organized to carry on a telephone business of considerable magnitude. The fact that defendant is a mutual company serving its own stockholders exclusively does not itself place the defendant without the meaning of the term 'telephone corporation.' The business carried on by the defendant cannot be considered as being of a private nature, as in the case of a line constructed and operated primarily for some individual's other business enterprises. The business of the defendant is of a magnitude to make it general and public in its nature, and the service rendered is a public service.

"This construction of the statute we believe to be in the light of the public good or welfare so as to give effect to the statute as a whole, and to carry out the general policy laid down by the statute and the evident intent of the legislature in enacting the statute.

"It being the prime purpose of the public utilities act to substitute regulation for competition, and to protect the public on the one hand and the investor on the other, it appears to this commission that the object and whole policy of the

statute would be defeated by permitting competition to the extent contemplated by the defendant under the guise of a mutual corporation. The commission finds that the defendant is a telephone corporation as that term is defined in the public utilities act, and as such is subject to the operation of the said act and to the jurisdiction of this commission, and that the defendant has not lawfully commenced operation or construction work."

Buffalo Merger Approved by City Council.

Amended in such a form that the terms are said to be agreeable to the interested companies, the city council of Buffalo, N. Y., on September 29, approved the agreement for the merger of the properties of the Federal Telephone & Telegraph Co. with the New York Telephone Co. The amended conditions were formulated at a meeting between Commissioner Chas. B. Hill and Corporation Counsel Wm. S. Rann, at which representatives of the telephone companies were present.

Objections were made by the companies to several conditions of the agreement as originally drafted. The most important objection, that referring to the first clause, which provided that existing rates for local service should not be increased except on an order from the public service commission following a hearing, was met by the substitution of an entirely new clause.

The new clause provides, in effect, that the approval of the merger does not bind the city as to the reasonableness of any rates that the New York Telephone Co. might put in force or in any way affect the right of the city to institute proceedings before the public service commission to test the reasonableness of any such rates.

The objection to the condition that the Federal company shall pay to the city $100,000 which the city has been trying to recover from that company under a provision in its franchise which bound the company to give the city annually 3 per cent. of its gross receipts, was met by the reduction of that amount to $75,000.

To the satisfaction of all parties, the third clause was changed so as to provide that the Federal company, before transferring any of its property, shall pay to the city the sum of $75,000, which the city shall accept in full payment of its claim for percentages of the gross earnings under the franchise. The clause provides for the discontinuance by the city of the suit brought to recover that percentage.

The provision that the burden of proof in an action to have rates raised be borne by the New York Telephone Co., was originally incorporated in the first clause, the one so vigorously objected to. It is retained, however, in another clause which was not in the first set. This one provides that in any action instituted before the public service commission, complaining of any rates filed by the New York Telephone Co., the burden of proving their reasonableness shall be borne by the telephone company.

Another clause provides that the consent to the merger shall have no force unless the conditions imposed are complied with and the sale consented to consummated within 18 months from the date of the approval.

The directors of the Federal Telephone & Telegraph Co. have notified the city council that the company has decided to accept the terms under which the councilmen will consent to the proposed merger.

South Dakota Supreme Court on Physical Connection.

A decision by Justice Whiting, of the state supreme court, and concurred in by his associates, sustains the right of the South Dakota Railroad Commission to require that two telephone companies operating exchanges in one town or city shall make physical connection for long distances service so that patrons of either exchange can have long distance communication over both lines. The case originated at Milbank, S. D., where patrons of one exchange objected to being required to go to the other exchange, or to the home of a patron of the other exchange, to answer long distance calls, or to dispatch long distance calls to points on the other exchange's lines. The commission ordered the two companies to arrange to interchange long distance calls. The companies appealed to the circuit court, lost, and then appealed to the supreme court, where they lost again.

In his decision Justice Whiting said:

"Appellant contends that the effect of making the connection ordered would be to deprive it of its property without due process of law; that to require it to connect its local exchange with that of another company, and by so doing give the patrons of such other company a right to the use of its wires for the long distance service, is the exercise of the power of eminent domain; and that our constitution prohibits the taking of property under such power without compensation therefore, paid in advance.

We are satisfied that the connecting of telephone exchanges, in order to facilitate the transmission of messages, and therefore advance the purpose for which the public service franchises are granted, is not an exercise of the power of eminent domain, but is entirely analogous to the power exercised by a railroad commission in ordering connecting switches between competing lines of railway; that, instead of being an exercise of power of eminent domain, it is a mere regulation of a public service corporation, if not under an implied power, resulting from the nature of the franchise enjoyed by the corporation then under the police powers of the state."

The decision of Justice Whiting does not have the effect, of course, of ordering physical connection between all competing telephone exchanges for long distance service; but it does authorize the railroad commissioners to require this connection when circumstances in their judgment justify such an order. This is the case of the City of Milbank vs. Dakota Central Telephone Co.; Supreme Court of South Dakota, 159 Northwestern, 99.

Standardization of Line Construction in California.

Looking to the safety of human life by the standardization of power and telephone transmission line construction, the California Railroad Commission has issued orders to 58 companies governing the construction of electric and telephone transmission lines in the state. To carry out the requirements of the order will require an expenditure of over $750,000. The orders took the form of authority for extensions of time within which these public utilities may comply with chapter 499 of the laws of 1911, as amended by chapter 600 of the laws of 1915 referring to the placing, erection, use and maintenance of electric poles, wires, cables and appliances.

The legislature passed this act for the purpose of removing the danger to employes engaged in the construction, reconstruction, maintenance and use of such property, and of the general public. The statute provided that it become effective six months from the date of its passage in so far as it relates to new work, and that five years should be allowed for the rebuilding of existing work to meet the provisions of the law. The legislature in 1915 amended its previous act, and vested in the railroad commission the authority at its discretion to grant additional time to corporations, and instructed it to pass on all work done.

The commission's order names specifically the period within which each utility must do a third and also two-thirds and the entire work, which last must be completed before June 30,

1919. All the companies are to report to the commission from time to time, as ordered, upon the progress of the changes. The orders direct the companies to proceed with the work as rapidly as possible, and vary in length of extension granted according to the conditions under which the utility operates.

Among the various requirements of the law are the placing of high voltage wires at such a distance apart on cross arms of poles as to permit safe clearance for linemen, the spacing of two or more cross arms according to standards provided, the maintenance of suitable pole ladders and the maintenance of sound poles.

May Reopen Old Spokane Franchise Case.

As a result of a resolution introduced by Commissioner Argall and adopted by the city council of Spokane, Wash., Corporation Counsel J. M. Geraghty is inquiring into the possibility of reopening the case in the federal district court at Portland, by which the purchase of the Pacific Telephone & Telegraph Co., of the Home Telephone & Telegraph Co., of Spokane, was approved in 1914.

In that case the federal government had ordered the Pacific company to dispose of its interests in the Home company, in which it had invested $800,000 at that time. A reservation was made to the effect that if the city council of Spokane voted to permit the consolidation it could be carried out. The city council voted for consolidation with a stipulation that the Home telephone franchise should be cancelled.

The consolidation followed, but the Home franchise was not cancelled and was later given a further lease of life when the Pacific company transferred its Spokane exchange to the Home, and is now operating under the title of the Home, and under the latter's franchise.

Attorney Geraghty seemed to believe the status of the telephone company and its franchise rights will be tested out in some court proceedings, the character of which will not be determined until the record is fully gone over.

"We want to show the federal court at Portland, if this line of procedure is deemed advisable, that a fraud was perpetrated upon the city of Spokane when the court entered its order approving consolidation of the two plants here," said Mayor Fleming.

"The people of Spokane at their polls by a decisive majority voiced their condemnation of the consolidation by voting down a new franchise granted to the Pacific company. If the court's order carries any binding force with the telephone company, the Home franchise would have been cancelled as agreed upon. The order of the court was violated in this particular, the agreement with the city broken, and I believe the court can, with good grace, permit the reopening of the whole question, if no legal obstacles interfere. Should the federal court decline to act, I favor a procedure in the superior court to try out the right of the Pacific company to seize and operate under the Home franchise."

Opinion on Location of Poles in Highway.

Telephone companies must so place their poles in the highway as not to inconvenience the public and if this is impossible, rights must be acquired from adjoining property holders, according to an opinion recently given by Attorney General Turner, of Ohio. The opinion was in answer to a question put to the attorney general by the Ohio State Telephone Co.

Litigation Ended at Nicholasville, Ky.

The city of Nicholasville, Ky., and the Cumberland Telephone & Telegraph Co. have brought their differences, which have been in the courts for months, to an end by a compromise. The terms provide, among other things, that the company will install a modern and up-to-date system, bury the wires in the main streets, and give an improved service. The city dismisses the suit to forfeit the right of the company to do business in Nicholasville, now in the supreme court, and authorizes an increase in rates, on the basis of $1.75 to $2 a month for residence service.

Second Party Use of Unlimited Service Barred.

The Massachusetts Public Service Commission has approved the abolition of second party preferential rates for unlimited service by the New England Telephone & Telegraph Co., of Boston, Mass.

In the past, two business men located in the same office with a single telephone line have been able to secure unlimited service for $175 a year in the Boston metropolitan district, the single party rate being $125. Two business men in adjacent offices have been required to pay $250, each having an independent telephone at the $125 rate.

The company contended that the unlimited second party use at a reduced rate was discriminatory and the commission upheld the point.

Excessive Damages for Injury to Lineman.

A verdict of $15,280.30 was awarded to a lineman, 24 years of age, earning from $1.50 to $2 per day, with a reasonable expectation of greater earnings in the future, for injuries received by an electric shock. He was knocked unconscious, and severely burned about the arm, breast, and hand, and suffered great pain for a considerable time. At the trial six months afterward he still had a fever, and his arm is likely to be permanently useless and a menace to his health. His weight was reduced and nervousness prevented sound sleep. In the absence of any showing that the jury was actuated by improper motives in reaching the amount of the verdict, the court ruled that the amount of damages awarded be allowed to stand. Gulf States Telephone Co. vs. Evetts, Court of Civil Appeals of Texas, 188 Southwestern, 289.

Santa Barbara Merger Authorized by Commission.

Consolidation of the properties of the Home Telephone & Telegraph Co., of Santa Barbara, Cal., and the Pacific Telephone & Telegraph Co., was recently authorized by the California Railroad Commission, upon the condition that the amount of securities to be issued by the new company be materially reduced and that the company shall file with the commission a stipulation agreeing never to claim for its franchises any value in excess of the amount originally paid for them. It is understood that a holding company, to be known as the Santa Barbara Telephone Co., of Oregon, is to take over the two companies and consolidate the plants.

City Cannot Compel Merger in Cleveland.

At a recent meeting of the Cleveland (Ohio) city council, a resolution was introduced by Councilman E. A. Meyers, providing that negotiations be undertaken looking to the possible combination of the Cleveland Telephone Co. and the Ohio State Telephone Co., in that city. Upon referring the resolution to City Law Director W. S. Fitzgerald, he has expressed the opinion that the city has no authority to compel a merger of the local telephone companies.

Examination of Pacific Company Plants in Washington.

As a result of protests against the $3.50 installation charge and complaints that the equipment used by the Pacific Telephone & Telegraph Co. is obsolete, the Washington Public Service Commission, on September 30, began an exhaustive examination of the company's plant.

Summary of State Commission Hearings and Rulings.

ALABAMA.

October 4: The commission ruled that all books of the Southern Bell Telephone & Telegraph Co., relating to rates and charges in Birmingham, may be examined by the city commission of Birmingham, under the supervision of any member of the public service commission or the secretary.

CALIFORNIA.

September 27: Supplemental order issued by the commission, setting aside the authority given on September 8 to the Southwestern Home Telephone Co., of Redlands, Cal., to issue notes for $7,000 to reimburse its treasury for capital expenditures. The company had asked the commission to vacate its previous order.

October: The commission approved the sale of the Home Telephone & Telegraph Co., of Santa Barbara, Cal., and the Pacific Telephone & Telegraph Co., in Santa Barbara to a holding company to be known as the Santa Barbara Telephone Co., of Oregon, and the consolidation of the plants.

October 16: Hearing in the Union League building, Los Angeles, on the application of the Southern California Telephone Co. for permission to take over and merge into one the properties of the Pacific Telephone & Telegraph Co. and the Home Telephone & Telegraph Co., in Los Angeles.

COLORADO.

October 10: Hearing on the investigation into the reasonableness of the rates and adequacy of the service of the Mountain States Telephone & Telegraph Co. in the state of Colorado.

IDAHO.

October: In the case of the Mountain States Telephone & Telegraph Co. vs. the Project Mutual Telephone & Electric Co., of Rupert, Idaho, the commission ruled that a mutual company is not exempt from the provisions of the public utilities act and therefore must secure from the commission a certificate of convenience and necessity before proceeding with the construction of a telephone line.

ILLINOIS.

October: Order approving the purchase by the Williamsville Telephone Co. of the plant of the Sangamon Valley Telephone Co. and the Williamsville & Sherman Telephone Co. at Williamsville, Ill. The commission approved also the issuance of common stock to the value of $14,600 by the Williamsville Telephone Co.

October 10: Continued hearing on the petition of the city of Peoria, by Richard H. Radley, corporation counsel, to compel the Central Union Telephone Co. to reduce its telephone rates to subscribers in the city of Peoria. A cross petition has been filed by the receivers of the Central Union Telephone Co.

October 11: Hearing on application filed by the Coon Brothers Telephone Co. for permission to increase its rates at the Saybrook, Ill., exchange. Protest filed by the business men of Saybrook. Case 4,871.

October 11: Hearing in the case of the 4C Telephone Co., R. Sloan, secretary, vs. A. J. Helmer, of Hickman, Ill., on complaint that the defendant has built and is operating a telephone line into Fountain Creek in the territory of the complainant. Case 5,044.

October 11: Hearing in the case of the Boone County Rural Telephone Co., A. J. Strom, attorney, vs. the Farmers Union Telephone Co., J. H. Corcoran, manager, on complaint that the defendant is extending its lines into the territory of the complainant in the southwest part of Boone county, Ill. Case 5,073.

KANSAS.

September 26: Hearing on application of the Whitewater (Kan.) Telephone Co., for permission to advance certain of its rates.

MARYLAND.

September 30: Conference with commission for the discussion of plans for issuing stock to bring the capitalization of the Chesapeake & Potomac Telephone Co. up to the valuation put upon it by the commission, which is $11,554,758.

October 4: The commission granted the Chesapeake & Potomac Telephone Co. right to exercise a franchise to operate in Denton, Caroline county, granted by the Denton city commissioners.

MASSACHUSETTS.

October: The commission approved the abolition of second party preferential rates for unlimited service by the New England Telephone & Telegraph Co., of Boston, Mass., upholding the company's contention that the unlimited second party use at a reduced rate was discriminatory.

MICHIGAN.

October 3: Petition filed by the Citizens Telephone Co. for permission to increase its rates at Traverse City, Mich. Protest has been filed by the city commission of Traverse City.

October 6: Hearing on application of the Citizens Telephone Co. for permission to increase rates at its Hastings, Mich., exchange.

MINNESOTA.

October 17: Hearing at Bluffton in the matter of the application of the New York Mills Telephone Co. for an indeterminate permit to construct telephone lines for the purpose of giving local service in the village of Bluffton from its New York Mills exchange.

October 23: Upon the petition of the counsel for the city and switching companies, the hearing upon the application of the Standard Telephone Co. to increase its rates at Preston, Minn., held at Preston on October 4, was adjourned to this date.

October 25: The hearing on the application of the Standard Telephone Co. to increase certain of its rates at Caledonia, Minn., which was to have been held at Caledonia on October 5, was adjourned to this date, upon the petition of the counsel for the local subscribers and switching companies.

NEBRASKA.

September 28: At a conference before the Nebraska State Railway Commission a controversy between the Gibbon Telephone Co. and the Kearney Power Co. was settled by the agreement of the latter to pay several hundred dollars to assist in the canvass of telephone patrons to secure their consent to the change in service necessary. The Gibbon company had asked the commission to force the Kearney company to pay all the expense of the changes in its wires made necessary by stringing transmission lines, but this petition was withdrawn. The settlement does not affect other cases of dispute between telephone and power companies.

NEW YORK.

October 3: Petition filed by the Northwestern Telephone & Telegraph Co., of Carthage, for authority to sell $3,000 of its first mortgage bonds, which have been acquired and are held in the treasury of the company.

OREGON.

October 16: Hearing in Portland on an application for a physical connection of the systems of the Home Telephone & Telegraph Co., of Portland, and the Pacific Telephone & Telegraph Co.

October 20: Hearing at Tillamook, Ore., on an application for a physical connection between the systems of the Tillamook County Mutual Telephone Co. and the Pacific Telephone & Telegraph Co.

WISCONSIN.

October 12: Hearing at the city hall in Marshfield, Wis., upon the complaint of A. B. Mintner and seven others against the North Lincoln Telephone Co. The action is brought to compel the company to give the petitioners telephone service.

October 17: Hearing at Madison in regard to the application of the Rock County Telephone Co., of Janesville, for authority to increase its rates for business telephones, both private and two-party lines. The charge asked for is $3 per month for a one-party line business telephone, the present charge being $2.50, and of $2.50 a month for a two-party line business telephone, either wall or desk set, the present charge being $2 for a wall set. No increase in residence rates is contemplated at present, according to the application of the company.

Telephone Courtesy.

The General Electric Co. has placed near each telephone throughout its entire plant a little card entitled "Worth Remembering," which reads as follows:

Many a man has dug his grave with his tongue.

The manner in which you use a telephone indicates largely what you are.

Discourtesy hurts the person who uses it more than the person to whom it is directed.

One discourteous act by you over the telephone does an injury to every man whose name is on the payroll; and a place on the payroll beats one in the bread line.

It is not always what a man knows; it is what he does that counts. Opportunity plays no favorites.

Knockers do not kill men—they kill business.

Chickens come home to roost; so do harsh words.

The New Home of the Texas Telephone Co. in Waco

Description of New Building Housing General Offices of Texas Telephone Co. and Consolidated Exchange of Texas and Southwestern (Bell) Companies—Special and Unique Features Incorporated in Its Architectural Details—New Equipment Installed

The new building of the Texas Telephone Co., in Waco, Texas, housing the general offices of the company and the consolidated Waco exchange, was completed in June, 1916, and is now occupied by the company. The building has been characterized by many telephone men who have seen it, as almost the last word in buildings for the purpose, of its size, being not only of the highest grade of construction throughout, but having incorporated in its architectural details many special and some unique features. The Waco telephone building has been the subject of numerous press articles in Texas newspapers, featuring especially the excellent provisions made for the comfort, convenience and welfare of the company's employes.

General Office and Exchange Building of the Texas Telephone Co.

The building is of fireproof, reinforced concrete construction, three stories and roof garden with a basement beneath the entire building. It is located on North Ninth street, just at the edge of a growing business district, and but a few steps from the main thoroughfare of the city. Erected on a slight rise of ground, the telephone building, with its roof garden, forms an attractive addition to the sky line of this live Texas city.

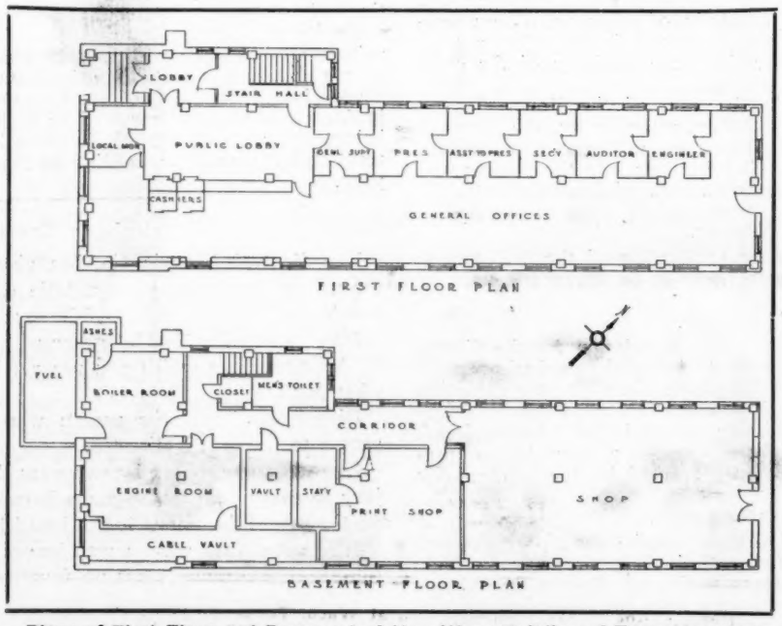
The structure occupies a lot 62½ ft. by 150 ft.; the building is 125 ft. long, 43 ft. wide at the front, and 31 ft. wide at the back, a "jog" 49 ft. from the front decreasing the width 12 ft. from that distance back.

The front elevation is very attractive, the front and the two sides for some distance back being laid up with "tapestry" brick, the coping and other ornamental features being of gray stone. The other exterior is of red brick.

The entrance lobby is laid up with "tapestry" brick, with tiled floor and marble wainscoating and steps. This lobby opens at the side into the public lobby, which is of good size, with tiled floor and marble wainscoating. To the rear of the entrance lobby is the stair hall, while at the back of the main stairs is the entrance to the basement stairs.

The basement contains the heating plant, with a fuel room, 9 ft. by 22 ft. under the front sidewalk; the engine room, with an auxiliary gas engine; a large, light cable vault; a vault for the storage of books and records; and the company's own printing plant, which is completely equipped with power presses and printing outfit, with an electric multigraph for circulars. Opening off of this room is another vault in which the more expensive stationery and the office supplies are stored.

In the rear of the basement is a large shop room. This has been partitioned to make a shop, a storeroom for small parts, and a small room for a "battery" of addressograph machines. The heavy material is stored in the company's warehouse, which is located, with the pole yard, in East Waco. From the basement there is a rear entrance, leading to the company's property in the rear of the building.

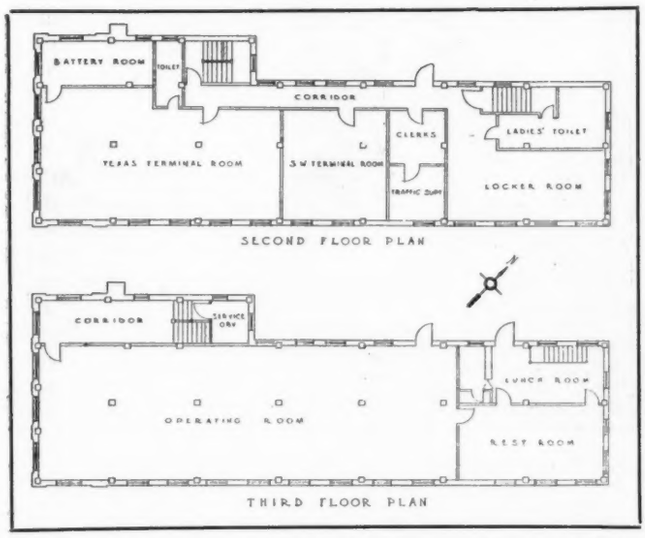


Plans of First Floor and Basement of New Waco Building of Texas Company.

The ground floor of the building is used, outside of the lobbies and halls, entirely for offices. There are six private offices partitioned off in mahogany and glass, for the officials, and a private office at the front of the building, opening upon the main lobby, for the local manager. The woodwork on this floor is in mahogany, and the

counters are topped with marble. There are two cashiers' cages and three public telephone booths in the main lobby. Extra booths, for night and Sunday use, are located in the entrance lobby. The office lighting, as well as the electric lighting throughout most of the building, is the semi-indirect system.

In the large general office room is located the local commercial clerical staff, in the front near the lobby. Back of this is the auditing department and to the rear the clerical force of the plant and engineering departments.

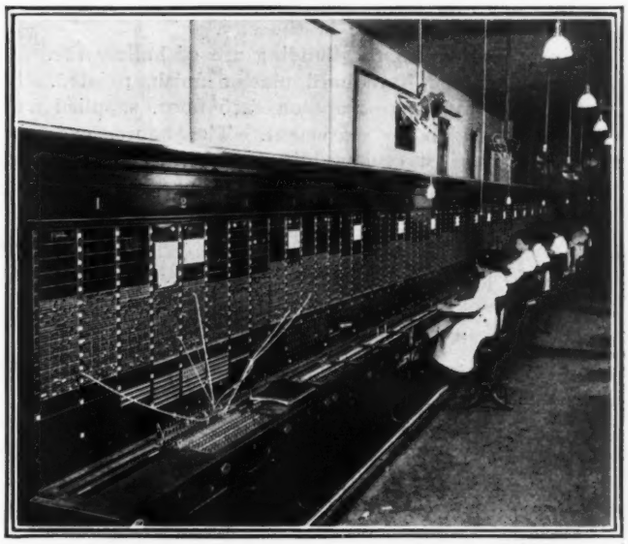


Second and Third Floor Plans of Waco Telephone Building.

On the second floor, at the front, is the terminal room, the battery room adjoining. Back of the main terminal room is another room, occupied by the Southwestern Telegraph & Telephone Co., for its toll terminals, the latter company's toll switchboard being also located in the building, in quarters leased for the purpose from the Texas Telephone Co. The office of the traffic superintendent, with his clerical force, is on the second floor, and the rear of this floor is occupied by the toilet and locker rooms for the operators.

The operating room covers the larger part of the third floor. Officials of the Texas Telephone Co. assert that this operating room is the best lighted and best ventilated of any for the purpose in the Southwest. It is a splendid room, with high ceiling and many windows, open on one side and the front to the direction from which the famed Texas "Gulf Breeze" blows, and is well equipped with electric fans and lights. "Buzz" fans are used, being suspended from the ceiling and arranged so that all can be faced in the same direction for the purpose of creating a steady current of air. Ventilators are provided, opening out upon the roof. The plastered walls are painted a restful green. Holophane shade lights are used with gas lights for emergencies. The building throughout is equipped for either electric or gas lighting.

The operators' rest room and cafe are at the rear of the third floor. Both are handsomely equipped and of good size. The woodwork on the second and third floors is of weathered oak and the rest room is done in brown with comfortable furniture. In the cafe the company serves a noon-day luncheon to the entire operating force and also furnishes lunches at other hours.



Local Waco Board About Ten o'Clock at Night.

A portion of the roof of the building is floored and

Operating Room of the Texas Telephone Co., at Waco, Texas on Third Floor of New Building.

finished as a roof garden, with room for seating more than 100 people. This arrangement is for the benefit of the operators, who have charge of the roof garden, excepting on special occasions and when gatherings are held there. A number of business and social organizations of the city have held open-air meetings on the roof of the telephone building during the summer. Entrance to the roof garden is had from an outside iron stairway, which is used as a fire escape, and is built from the ground up, with openings to the second and third floors.

The fire-proofing arrangements in the telephone building met with high praise from the state fire insurance commission. All outside doors are of metal and the windows have metal sashes with wire glass, excepting those in front. Doors opening upon the outside iron stairway are equipped with fire escape latches. All basement doors are approved fire doors with self-closing hardware. The fire insurance rate on the building is only 16 cents on the $100—the lowest rate in the city.

Inside partitions in the building are of hollow tile. All walls and ceilings have hard plaster finish, painted. Ice water drinking fountains are on each floor, supplied from a cooler tank in the basement. The floors, excepting where tiled, are of cement mixed with hardener and colored. Stairways are of reinforced concrete with safety

Operators' Rest Room in the New Waco Exchange.

treads. Provisions are made for a future fourth floor on the building, the stair and landing being built in from the third floor, the landing being in present use as a service observation room.

The architects of the Waco telephone building were Ross & Cason, of Waco. The architectural details and arrangements covering the installation of telephone equipment and machinery, however, were planned by the company's own engineering department. J. S. Harrison & Son, of Waco, were the contractors.

Construction was begun October 20, 1915, and the Texas Telephone Co.'s local exchange was cut over from the company's old building on North Fifth street, to the new equipment in the new building, on June 10, 1916. The final consolidation by cutting over the Southwestern non-duplicate telephones from the Southwestern office on Fourth and Washington streets, was made on the night of August 19. The Southwestern toll board was cut over to the new building early in August, and the Texas company's toll board on August 27.

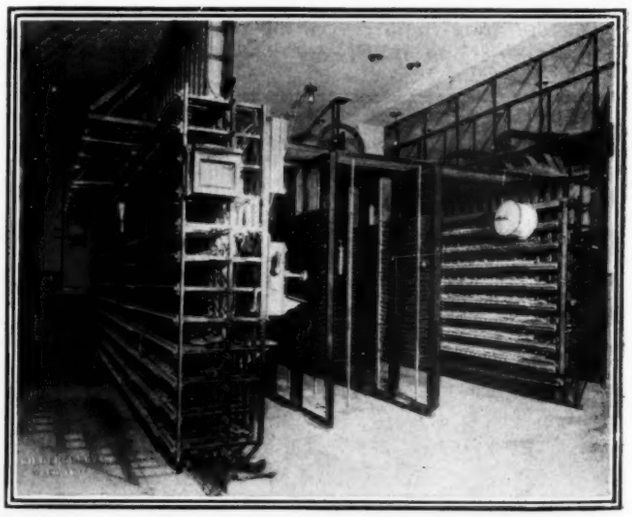
The local equipment of the new Waco exchange consists of a new Garford multiple switchboard of 9,600 lines' capacity, with 14 sections and 42 positions. There were equipped 28 positions in the first installation, but the growth has been so rapid since the consolidation that the company is now completely equipping the remaining positions. The board was equipped with 5,260 lines, as installed; 32 local positions, two trunking positions, one pay station position and two rural positions, the latter equipped for 60 rural lines. The switchboard with the woodwork in mahogany is of the latest model, with automatic ringing and recall.

General and Private Offices in the New Waco Building.

The distributing and intermediate frames, relay and cable racks, on the second floor of the building, were installed with provisions for sufficient capacity for the ultimate growth of the exchange. The chief operator's desk, information desk, service observation desk, and test board, were installed new by the Garford Mfg. Co.

The toll equipment installed consists of a 12-position multiple Garford toll board, fully equipped. It has four recording and eight line positions, the latter handling approximately 50 toll lines of the Texas Telephone Co. This board is located in the main operating room, as is also the toll board of the Southwestern Telegraph & Telephone Co.

The recording for both companies is handled by joint toll recorders on the Texas toll board, the subscriber being



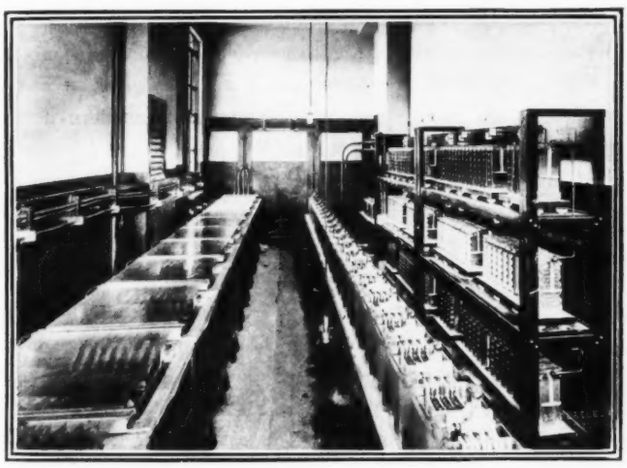
View of Terminal Room of the Waco Exchange.

required, when filing his call, to specify whether it shall be sent over "Independent" or "Southwestern" toll lines. A toll chief operator's desk is a part of the new installation. The toll board is equipped with a special "delayed call" ticket filing device, as worked out by the traffic de-

partment of the Texas Telephone Co. It was explained in detail in TELEPHONY of July 3, 1915.

The Waco consolidation was authorized by the city in 1914, following an extensive campaign carried on by a number of local business organizations for the purpose of doing away with local dual telephone systems. The Texas Telephone Co. was incorporated in September, 1914, and succeeded to the property and business of the Brazos Valley Telegraph & Telephone Co., which had agreed to purchase the Waco exchange of the Southwestern Telegraph & Telephone Co. The Texas company also operates a number of exchanges in the Waco territory. The Waco plant was practically rebuilt in 1915 and the exchange is modern throughout with an extensive underground and aerial cable plant.

The Independent company began business in Waco about 1889, in competition with a Southwestern exchange and is one of the most successful Independent properties in the South. It has at the present time, connection with about 5,000 miles of Independent toll lines in Texas and is doing a steadily increasing long distance business. It has also covered extensively the rural communities and districts in its territory, having several thousand rural subscribers. Waco, the headquarters of the company and the location



Battery Room of the Texas Telephone Co., Waco.

of its largest exchange, is a wide-awake city of some 40,000 inhabitants.

Officials of the Texas Telephone Co. report that since the consolidation in Waco the growth in subscribers has been unprecedented. Since August 20, eight wagons have been kept busy on orders. The local traffic load is also usually high for an exchange of this size, averaging 75,000 local connections on week days. The telephone consolidation in Waco has met with the high favor of the citizens of that city.

Telephone Service and Arc Circuit Interference.

An interesting discussion of the relative effect of Brush arc machines and mercury arc rectifiers on telephone service, was a feature of a recent hearing before the Massachusetts Gas & Electric Light Commission, which is sitting as an arbitration board to determine the price of street lighting to be charged the city of Boston by the Edison Electric Illuminating Co.

Leonard L. Elden, electrical superintendent of the Edison company, stated under cross-examination that by agreement with the New England Telephone & Telegraph Co., the maximum pressure regularly allowed on overhead series lighting circuits occupying poles jointly with the telephone company is 6,000 volts where such circuits are fed from mercury arc rectifiers. Every effort is made by the Edison company to keep the number of lamps on such circuits down to this voltage limit. When the circuits are fed from Brush arc generators, a maximum sustained voltage of 8,500 is permitted.

In view of the tendency to use rectifiers on new work, the effect of these on telephone service is of considerable interest. The witness said that the pulsating current produced by rectification is much more disturbing to telephonic transmission than the smooth current supplied by Brush arc generators, even with the voltages 6,000 and 8,500 respectively. At the time the agreement was made, the Edison company was informed that the protective devices used by the telephone company could not be relied upon to take care of any higher pressure than 6,000 volts operating from a rectifier, and the effect of the pulsating current was also a serious element in the voltage limitation agreed upon.

The witness stated that the proximity of the lighting and the telephone circuits expressed in exposed length and separation is the most important factor in inductive interference. It is difficult to state how far away telephone circuits must be run to avoid interference. On the rectifier system, going out and returning on the same street and on the same line of poles, the interference trouble is greatly reduced. In such cases the wires could be within 40 inches clearance before the telephone company would suffer much trouble. If, however, as is the case in many circuits, the wire starts out on one street and returns by another, the disturbance becomes very much multiplied, and even separation of the width of the street becomes insufficient to reduce the interference to the necessary amount. On the Brush machines, the maximum pressure will not momentarily exceed 12,000 volts, whereas on the rectifiers it goes momentarily to 19,000 volts.

Mr. Elden said that he knew of no apparatus capable of neutralizing the pulsating current on the rectifier, so far as it affects telephone service, although induction coils have been used in connection with interference from other kinds of current. The Edison company placed reactance coils on all its Brush arc generators many years ago to damp down the pulsations of alternating current between certain portions of the armature windings, thus eliminating voltage peaks which sometimes resulted in the puncturing of the cables. It has not appeared practicable to attempt to smooth out the pulsating current from rectifiers, on account of the fact that the current is derived from a system of certain frequency, in this case 60 cycles per second.

As a practical matter, the witness said that it is impossible to keep the arc lighting circuits at every moment within the agreed limit of 6,000 volts. If a considerable number of lamps is ordered by a municipality at any one time to be connected to a circuit for a certain district, the Edison company connects the lamps as soon as possible. Then within the earliest feasible time, often within a few days, the necessary copper is installed to relieve the circuit and bring down the voltage to the specified limits.

Missouri Convention Postponed.

On account of the dates for the Ohio, Illinois and Kansas conventions being so close to the dates upon which the Missouri Telephone Association contemplated holding its convention, namely, November 21 and 22, the executive committee has decided to postpone the holding of the convention until after January 1, 1917. The dates will be decided upon at a meeting of the executive committee which will be held in the near future.

Illinois Company to Erect New Exchange in Manchester.

Work has been commenced by the Illinois Telephone Co., of Jacksonville, upon the construction of a new telephone exchange in Manchester, Ill. The contract for the new building was awarded to R. H. Walter.

"Telephony's" Home Study Course for Telephone Men

A Complete Presentation of the Principles Underlying Modern Telephony in All Its Branches—Arranged Systematically So That Regular Reading and Faithful Study Will Qualify Ambitious Men for Higher Positions—Prepared Under Supervision of Stanley R. Edwards—This Section Written by Jay G. Mitchell

Quiz Questions on the Preceding Installment.

493. What is the relation between cell dimensions and capacity in primary and secondary or storage battery cells?

494. Outline a method of estimating approximately the normal charge and discharge rates for storage cells of the lead-lead type.

495. What is a safe rule as to the discharge limits?

496. Why does the voltage remain higher when the discharge rate is low?

497. What is the safest indication of condition of charge or discharge?

CHAPTER XII. Power Plant Principles (Continued.)

498. *Characteristics of Planté storage battery plates.*—There are two general classes into which battery plates composed of lead and lead compounds may be placed. These two classes are based upon a difference in the method of manufacture. In one, the active material is electrochemically formed from the material of plain lead plates. The electrical contact between the active material and the lead support in this type is, therefore, of the most intimate character. In fact, the active material in this class of plates is an *integral part* of the conducting support. Since the charge and discharge currents of all storage cells must pass to or from the active material and flow through the support, the *internal resistance* of such a battery, owing to this perfect electrical connection, is very apt to be low.

The methods used in the various factories to produce this class of plates are, in general, quite similar while differing in some very important details. In several factories, pure sheet lead is ploughed or spun into ridges of various shapes on the flat side of the plate. These ridges are very thin and lie close together, affording a comparatively large surface for the formation and support of the active material. As stated in section 494, in one make of battery there are 18 square inches of active material exposed to the electrolyte for each square inch of superficial area of plate. In another method the active material is formed on the surface of corrugated lead ribbon which is first coiled into a spiral and placed in circular openings in a cast supporting grid or frame.

To the entire class of plates on which the active material is formed by electrochemical means from the material of the supporting member, the general name Planté is given. This name is used in honor of Gaston Planté, the inventor. M. Planté produced the first practicable storage battery in 1868.

The original Planté process plates were formed from sheet lead plates immersed in dilute sulphuric acid, by successive charges and discharges, each *discharge* being followed by a *charge* in the opposite *direction* to the previous one. After a number of such reversals, Planté obtained a very rich layer of active material formed from the material of the lead sheets. It is well worthy of note that Planté attained very satisfactory results as to capacity, although at the cost of the expenditure of a great deal of time. He also used electrolyte having a specific gravity of 1.070 which is nearly the same strength as is standard at the present time.

499. *General construction of Faure plates.*—The second general division into which storage battery plates may be placed, includes plates in which the future active material is mixed, usually in the form of a paste, and is then pasted on or in the conducting and supporting grid. In the more modern design of pasted plate, the supporting grid is made in the form of a rigid outside basket-like container with the active material inside. This type of storage battery plate, in general, has been called the Faure plate after Camille Faure, one of the inventors of this broad general process of manufacture.

500. *Advantages of Faure-type plate batteries.*—The principal advantage of the pasted or Faure type of storage battery plate, is the relatively great amount of active material possible for any given plate size. With this relatively great proportion of active material, the capacity of the plate in ampere hours *per pound* of plate is greater than is possible of attainment in any other way. For this reason the Faure type of plate is almost universally used for traction service, since in this service the weight of the battery itself is a part of the load to be moved.

The Planté type of plate is more often used for service permitting the use of a stationary battery. In this class of service, it is obviously not of so great importance that the battery be light in weight for any given capacity or that extreme economy in space be realized.

In batteries used for traction or in connection with the lighting, starting, and ignition systems of automobiles, it is very clear that light weight and compactness is desirable with as large ampere-hour capacity as possible. In the batteries used for traction purposes, the plates and the electrolyte are contained in close fitting hard rubber jars. The relative space occupied by the electrolyte is, therefore, more limited than is the case in stationary batteries.

For that reason the specific gravity of the electrolyte, owing to the absorption of a relatively greater *proportion* of acid from the plates, rises to a greater value on charge than in stationary batteries. In other words, the relative space occupied by the electrolyte being smaller, the proportion of water

contained at full charge is less and the amount of acid driven from the plates per ampere-hour is the same. Therefore the electrolyte contains a larger proportion of acid and is stronger, when the cell is fully charged, than it is in the case of stationary batteries.

While the type of storage battery contained in rubber jars is not widely used in telephone operating, there are a few in this service and this matter of the wide range of the specific gravity of the electrolyte is an extremely important point to note in their operation and maintenance.

501. *Testing portable storage batteries.*—When the parts of the battery are contained in hard rubber jars, it is impossible to make an inspection of the plates. This may be very readily done in the case of batteries in which the cells are provided with glass jars. The only way in which the condition of storage cells in hard rubber jars may be determined is through the examination of the specific gravity of the electrolyte and the voltage across the terminals when the normal charging or discharging current, as the case may be, *is flowing*.

In large capacities of stationary batteries, it is standard practice to use lead-lined wood tanks in place of the glass or hard rubber jars used in the smaller sizes. Steel tanks with lead linings were used at one time but were not found to be as popular as the lead-lined wood tanks. In the large cells, whether equipped with glass jars or lead-lined tanks, it is customary to place hydrometers permanently in one or more of the cells. With hydrometers floating in this way, the specific gravity of the electrolyte is easily read and the likelihood is reduced of its proper supervision being neglected.

The plates in the lead-lined tanks are not as difficult of inspection as those in the hard rubber jars. Special shaped electric lamps may be obtained which will pass between adjacent plates and fully illuminate the surrounding space through the electrolyte. In the hard rubber jars, reliance must be placed upon the specific gravity and voltage, as an actual internal inspection is impracticable on account of the close-fitting top or cover of the jar. This top is necessary in portable cells to prevent the escape and loss of the rather scanty electrolyte when the cell is agitated.

502. *The hydrometer.*—Specific gravity, between the ranges shown by good electrolyte, is most conveniently measured by means of the hydrometer. In the form used in the testing of storage battery electrolyte, this instrument consists of a glass tube closed at both ends and weighted at one. When placed in the electrolyte it sinks to a depth determined by the density or weight per unit of volume of the liquid.

It is a law of physics that any floating body will displace exactly its own weight of the medium in which it is placed. The hydrometer for testing storage battery acid is so designed that its weight will be slightly less than an equal *volume* of electrolyte. With very strong electrolyte, such as will be found in any storage cell immediately following a full charge, the hydrometer, since its weight is constant, will not sink to as great a depth as it will when the electrolyte, at the end of a discharge, is weaker.

By graduating the stem of the instrument and calibrating the graduations, it is possible to read directly the specific gravity of the electrolyte in which it may be placed by noting the point at which the surface level of the electrolyte touches the graduated stem.

When it is not possible, as in cells in hard rubber jars, to insert the instrument directly into the electrolyte, a small amount may be withdrawn into a proper receptacle and tested, after which it may be returned. There is available for this purpose a glass syringe with a small hydrometer permanently placed in the barrel wherein the specific gravity of the electrolyte may be easily read.

It is not to be lost sight of for a moment that the *most important* instrument in the care of the storage battery is the hydrometer, by means of which the specific gravity and therefore the state of charge of the battery plates may be determined with very fair accuracy.

503. *Size of plates advisable for any desired capacity.*—In section 493, TELEPHONY's Home Study Course for Telephone Men, October 7, 1916, the statement was made that "There are certain practical rules of operation bearing upon this feature (plate area) which may call for the use of larger size plates rather than a great number of small ones to attain the necessary plate surface for the desired capacity." The operating condition referred to may be stated as follows:

All the positive plates in any given storage cell must be electrically joined together in *one group*. The same is, of course, true of the negatives. The use of *lead* or *lead-covered* bus bars for this purpose is imperative in order to prevent the corrosive action of the electrolyte which will otherwise finally destroy them. It is impossible to protect such bus bars from contact with the electrolyte, as it is sprayed over them during the charging and covers them as well as the edges of the battery jars with an acid film.

Lead is perfectly satisfactory as a protective covering, in that the chemical action of the electrolyte, in the absence of the electric current passing into or from the lead to the acid, is negligible. While it is satisfactory from the standpoint of resistance to the chemical action of the electrolyte, its specific resistance is rather high as an electrical conductor carrying heavy currents. The result, therefore, of using a great number of plates in one cell to attain high ampere-hour capacity, is very apt to be an unequal distribution of the current. In other words, those plates which are nearest the point of entrance of the current will, in charging, receive the greater charging effect. Those more distant will be discriminated against, because they are shunted by the shorter path to the plates of opposite polarity through the electrolyte.

(To be Continued.)

Definition of a Troubleman's Duties.

The General Electric Co., of Minneapolis, Minn., has started a system of bi-monthly examinations for troublemen. Among the questions asked is: "What are your duties?" One of the first answers secured in reply to this question is so comprehensive and expressed in so few words that it is considered almost ideal. The answer was:

"My duties are to advance the present high standing of the company in the minds of the people, to render cheerfully any service that may be required of me, to treat everybody with the highest courtesy, to protect life and property, to maintain service, to repair customers' wiring and appliances where possible, to practice economy and efficiency and to report to the office frequently."

Your Rate Case

A Hypothetical Situation—What the Property Is—The Character of the Property

By J. C. Kelsey

The Brown Telephone Co. was suffering. The manager knew full well that the rates were too low. At each directors' meeting he made a frantic appeal to the seven who composed the board and whose money had been injected into the enterprise.

The company had started in a sensible way; had built up to 2,000 subscribers, and had actually expended $160,000 in the enterprise. At first it made money but, as the subscription list grew, trouble began. The company no longer had ready money to meet its obligations, and the manager often thought the beautiful blue lake which lay so close to the town, would make a fine resting place for his weary body.

The rates of the Brown Telephone Co. were as follows:

Business, single line	$24
Business, two-party line	21
Business, four-party line	18
Residence, single line	21
Residence, two-party	18
Residence, four-party	15

The annual statement turned out as follows:

Income:		
Rental earnings	$34,000	
Toll earnings	4,000	
		$38,000
Expense:		
Operation	$26,000	
Reconstruction	4,000	
		30,000
Net earnings		$ 8,000

Percentage of earnings on $160,000 investment, 5 per cent.

In vain the manager pointed out to the directors that the company was not even earning 5 per cent., because no reserve for future reconstruction or depreciation had been accumulated. In vain had he argued that a single storm or rage of Nature would seriously impair their capital, and cause them a distinct loss from their own pockets.

The butcher, baker, druggist, grocer, banker, doctor, and lawyer sat in mute perplexity. They knew that something was wrong, but they feared to meet the wrath of the public and pleaded delay after delay until, in a moment of impatience, the manager, after berating them for cowardice, threatened to resign and go elsewhere. But the directors had leaned on the manager too many years to lose his services.

In spite of the fact that each tradesman had added to his prices, they still pretended that they could not understand why the manager was getting so excited.

It cost money to have appraisals made and have lawyers and the manager appear before the public utility commission. It would make them sneak around alleys dodging irate subscribers, and life was too short to go to such trouble. But they finally asked the manager what he wanted to do. Thereupon he proclaimed the following change in rates:

Business, single line	$30
Business, two-party line	27
Business, four-party line	24
Residence, single line	24
Residence, two-party line	21
Residence, four-party line	18

In order to facilitate collections, the rates were made subject to a discount of 25 cents per month if paid in advance on or before the 10th day of the month.

The directors had long known of the difficulty of making proper collection, and quickly realized that this, at least, was a move in the right direction. But their hearts were chilled as they contemplated a $30 business rate in a city of 20,000 people and a subscription list of 2,000.

While the manager knew the rate was still too low for an exchange of any size, he was governed by the fact that the public utility commission, with good engineers, would see through his deceit and possibly turn him down altogether if he tried to get through a higher schedule.

He figured that with the new rates in force, his balance sheet would show the following result:

Income:		
Rentals	$42,000	
Tolls	4,000	
		$46,000
Expense:		
Operation	$26,000	
Depreciation	8,000	
		34,000
Net earnings		$12,000

Percentage of earnings on $160,000 investment, 7½ per cent.

The manager knew, while the new rate did not allow him more than 5 per cent. depreciation, and a return of greater than 7½ per cent., he, at least, could protect the capital of the company from impairment and could make additions to the plant which the public demanded, simply because he showed an earning of 7½ per cent. to the locality.

Had the manager been allowed to set aside a 6 per cent. depreciation fund—and no man is so blind but he can see that a telephone property cannot last 16⅔ years, with even the best of care and upkeep—his statement would have been as follows:

Income		$46,000
Expense:		
Operation	$26,000	
Depreciation	9,600	
		35,600
Net earnings		$10,400

Percentage of earnings on $160,000 investment, 6 per cent.

This leads to an opinion of a rather famous public utility expert that the relation of depreciation and net earnings should be 6 and 6, or 6 per cent. each. No telephone company in America will ask for more than this combination nor will any investor who, after all, is the governing factor in any rate case.

The whole test of any telephone rate is a question of interesting the investor, who lives in competitive markets and who must necessarily put up the money for the countless things the public demands of all of its servants.

The case of the Brown Telephone Co. was easy because every dollar of investment had been made dollar for dollar. The manager, being a real telephone man, had obtained dollar for dollar for equipment, construction, and all.

There was no question as to the fair value of the property because on the face of it, the property had cost more than the investment showed for the manager was wise and thrifty and the company lucky. There was no tangle of old losses, nor storm damage, and no claim was made for successive annual deficits.

But, remember, the Brown Telephone Co. only exists in the mind—we must go ahead from here and assume the average true condition which we meet every day.

In the Minnesota rate case—a railroad case by the way but applying directly to our own business—the supreme court said: *"What the company is entitled to demand in order that it may have just compensation, is a fair return upon the reasonable value of the property at the time it is being used by the public."*

No telephone company is really and truly guaranteed a profit but the national constitution and that of every state give the company an opportunity to earn a fair return rather above the cost of furnishing reasonable service to the public.

Search as long as you will, you will never find a case in existence where any court has ever made a definition of the term "fair or reasonable value." Courts have said fair value, time and time again, but no statute has ever mentioned it. In no case do we find the word "value" being used as contemporaneous to "cost" or "investment."

The Minnesota rate case did state "that the original cost of construction, together with other facts, would be useful in order to ascertain that value." In other words, each case before the courts must rest upon its special facts—it cannot be a matter of formulae.

To determine the value of the Brown Telephone Co., supposing it to be the average company which did not properly keep its books, it is necessary to know at least three things:

1. What the property is.
2. The character of the property.
3. Facts necessary to determine value.

We all know what the telephone property is. It is a going concern, with an established business running back 15 years.

It is an organized entity, equipped with the latest devices known to the telephone art, and has trained men and women in its service. It operates under the best of modern practices, and requires working capital, material and supplies constantly on hand.

It has been tested and proven equal to the demands made upon it by the public and has, after 15 years' existence, established harmonious relations with the city as well as its patrons which it so well serves.

All these items are property rights which cost considerable money to obtain. They must necessarily be classed as much as actual assets as switchboards, cables and telephones.

The second point is that there is a wrong impression of the property in question. Some people, and some commissioners, too, have arrived at the strange conclusion that public service corporations are not at all to be regarded as private property and thereby lose many of the elements which normally constitute value when it is devoted to public use. Consequently, we hear of values for sale purposes, rate-making purposes, and a third value for issuance of securities.

The idea is wrong, for, after all, property is something which cannot be taken from anyone without due process of law. Property, whether public or private, means the very same thing at all stages. In fact, no decision has ever been handed down which justifies the theory that when citizens devote property to the use of the public, it loses the elements which go to give the property its proper value.

When your state created the public service commission, it did not change any of the company's rights. It did not change the character of the property, nor did it create any new rights or take away or qualify any existing rights. The rights of your company and its obligations governing the ownership and operation of your property, have remained the same as they were under the common law.

The purpose and only effect of the act creating any commission is to provide the machinery by which the obligations imposed upon the company can be enforced.

Since the creation of your commission, the jurisdiction of the courts has not been abolished. They still have the power over rates and practices of public service corporations and the lowliest individual may still appeal to the courts for justice. No rights have been lost, and the enforcement of your rights is but a question of courage.

To convince yourself of what you have, read Justice Brewer's decision in the case of Ames vs. Union Pacific. It is a long decision, but a masterly classic and should be memorized by every telephone man:

"Property invested in railroads is as much protected from public appropriation as any other."

"If taken for public use, it must be paid for."

"Constitutional guaranties, to this extent, are explicit; and in such condemnation proceeding, no inquiry is permitted as to *how* the owners have acquired the property, provided only it be legally held by them."

"If a farm belongs to an individual and the public seeks to take it, it must pay its value and is not permitted to diminish the price by proving the owner acquired the means of purchase by immoral or disreputable practises.

He may have made his fortune dealing in slaves, as a lobbyist, or in any other way obnoxious to public condemnation, but if he has acquired the legal title to the property, he is protected in its possession, and cannot be disturbed until the receipt of its actual cash value.

The same rule controls if railroad property is sought to be appropriated—no inquiry is open as to whether the owner has received gifts from state or individuals, or whether he has, as owner, managed the property ill or well, or so as to acquire a large fortune therefrom.

It is enough that he owns the property—has the legal title—and so owning he must be paid the actual value of that property.

If he has done any wrong in acquiring or using the property, that wrong must be redressed in a direct action therefor, and cannot be made a factor in condemnation proceedings."

"Is there not an element of equity which puts the reduction of rates in a different attitude from the absolute taking of property by virtue of eminent domain?"

"In the latter case, while only the value is paid, yet that value is actually paid, and the owners may reinvest and take the chances of gain elsewhere, *whereas, if the property is not taken, the owners have no other recourse than to receive the sum which the property they must continue to own will earn under the reduced rates.*"

Telephone property has the same rights as private property, and no deserving telephone company should hesitate one day to assert its rights. All these years of harmonious relations with the public are worth something, and the telephone man should not delay in cashing in.

MORAL: To be continued in our next.

Dunwoody Institute to Teach Automatic Telephony.

The Dunwoody Institute, Minneapolis, Minn., has anticipated the cut over by the Tri-State Telephone & Telegraph Co., to its new automatic system, which is expected to take place this month, by offering special instruction in the operation of automatic equipment. The course includes three of the 20 units in the telephony division of the work.

Fundamental Principles of the Telephone Business

A Reading Course Designed to Present Logically the Principles Which Underlie Successful Organization and Operation of Telephone Properties—Prepared Under the General Supervision of Stanley R. Edwards—Part I, Telephone Economics, by James H. Shoemaker, Completed June 26, 1915—Part II, The Corporate Telephone Organization, by J. C. Kelsey and S. R. Edwards, Completed September 25, 1915—Part III, Telephone Accounting and Auditing, by James H. Shoemaker, Completed January 15, 1916—Part IV, Telephone Finance, by J. C. Kelsey and S. R. Edwards, Completed June 3, 1916—Installments Now Being Presented Comprise Part V, Telephone Advertising and Publicity, Written by Roy D. Mock

Quiz Questions on the Preceding Installment.

85. What two classes of subscribers are appealed to by advertisements of extension telephone service?

86. Suggest some headings for extension telephone advertisements.

87. What constitutes an important feature of a general advertising campaign in which extension telephone service is given attention?

88. Give suggestions for soliciting extension telephone service.

89. What is the argument in favor of the suggested method of solicitation of business? What two directions may the selling talk take?

"Glad to hear everything is running smoothly. I won't be back until Tuesday. My daughter needs me for a little tennis."
Add a Day to Your Week-End —Telephone
Are you, Mr. Business Man, going to spend unnecessary time in the hot, dusty city this summer, when *the telephone* makes it possible for you to stay out in the open where you can get the greatest amount of pleasure and relaxation?
By telephone, it is a simple matter to call your office in the city, give proper directions and decide any important matters that may need your attention. You may then enjoy the rest of the day with a mind free from worry about business affairs.
It's a simple, effective, *satisfactory* way to add a day to your week-end.
Why not stay in the country MONDAY—and Telephone?
CUMBERLAND TELEPHONE AND TELEGRAPH COMPANY
(Incorporated.)

Fig. 76. A Good Example of Human Interest Appeal.

90. Suggest opening words for a selling talk to be delivered over the telephone. What is the main point in telephone solicitation?

CHAPTER VII. New Business Advertising (Continued).

91. *Increase of Toll Line Business and Arguments in Favor of Use of Long Distance Lines.*—Increasing the toll line business of a company having the proper facilities for handling it,

The Bell Telephone Unites the Family
Almost regardless of distance, the Bell Telephone brings the voices of absent ones right into the home circle.
This country is made one big neighborhood by the 21,000,000 miles of telephone wire extending to every corner of the land.
"The World's Most Efficient Telephone Service."
NEBRASKA TELEPHONE COMPANY

Fig. 77. This Advertisement Also Has a Human Interest Appeal.

is a great deal like increasing the extension telephone business. Every toll call put through adds to the revenues of the company without appreciably increasing its operating expense. Consequently, it is profitable business to go after, but how to get an increase in long distance business is a problem.

There is no question of the effectiveness of a long distance call for business purposes. It is far better than a letter, no

matter how well written that letter may be. Letters do not always reach the men to whom they are addressed, but a long distance telephone call always does. Consequently, for business purposes a long distance call is better than a letter and almost as good as a personal interview. Some people maintain

Travel Via The Independent Telephone
Your Independent Telephone is the "Short Road" to Dallas, Houston, San Antonio, Fort Worth, Austin and all the principal points in Texas.
Why not use this "Short Road to Everywhere" when the service is so good, the cost so trifling and the satisfaction and results so great?
It's too hot to travel—Let your voice and the Independent Telephone do it for you.
AT YOUR SERVICE
THE TEXAS TELEPHONE CO.
"THE INDEPENDENT SYSTEM"

Fig. 78. Story Told Briefly and to the Point.

it is better than a personal interview because the story is told more briefly and a quicker decision is reached. And somehow the fact that a telephone call is coming from a distance seems very impressive to most people—more impressive than to have a man travel the same distance.

92. *Necessity for Education of Public in Use of Toll Service.*—Undoubtedly the thing that has most hindered the rapid development of long distance telephoning has been a slight reluctance on the part of people to make a long distance call. They are a little nervous at the prospect of talking to out-of-town points. They feel perfectly free and easy when using the telephone for local calls, but thoughts of long distance unnerves them.

With greater familiarity in the use of the telephone, this situation will disappear; in fact it is disappearing. But the condition points the way to a very interesting and profitable series of advertisements explaining to people just how easy it is to make long distance calls. Most advertisements advocating the use of long distance lines that have come to the writer's attention, have ignored this point and have been devoted to urging people to use the long distance telephone and to suggesting specific reasons why it should be used. But they have not attempted to convince people that it is easy to telephone long distance—just as easy as to telephone locally.

93. *Examples of Newspaper Advertisements.*—An example of a human interest appeal is given in the advertisement reproduced in Fig. 76. It will, however, influence but few people, as a very small percentage of population leaves town on week end trips, even in hot weather. Fig. 77 which is also a reproduction of a Bell advertisement, has some human interest appeal in it. It could be very much improved, however, if the other member of the family—the son or daughter—could be shown completing the connection.

A good Independent advertisement on the subject of long distance telephoning is reproduced in Fig. 78. It tells the story briefly and very much to the point. It is the writer's belief, however, that a stronger heading for this advertisement would have been: "It is too hot to travel. Use the Independent Telephone!"

94. *Use of Blotters Suggesting Utilization of Toll Service.*—A rather unique idea to increase long distance business is shown in Fig. 79, which is a blotter used by the Tri-State Telephone & Telegraph Co. This blotter is evidently one of a series designed particularly to appeal to traveling men. It is attractively printed in colors and is supplied free in quantities to hotels in the territories served by the Tri-State company. When the salesman sits down at the writing desk to figure out his business for the day, he is confronted by one

When the Toil of the Day is Ended
And you're far away from the loved ones—talk to them—
Over Tri-State Toll Lines
A good day's business is made doubly good, while the depressing effect of a "poor day" is dissipated by a cheery word from HOME.
Greatly Reduced Rates after 6:30 Every Evening
Ask the Operator
The Tri-State Telephone Co.

Fig. 79. Blotter Advertisement Supplied to Hotels in Tri-State Territory and Designed to Appeal Particularly to Traveling Men.

of these blotters bearing the suggestion that he call up his home over the long distance wires. A. C. Brokaw, the well known advertising manager of this company, states that in his opinion this is one of the most profitable advertising ventures his company has ever made. The idea can no doubt be used

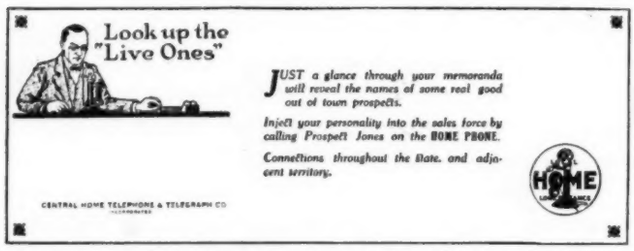

Look up the "Live Ones"
JUST a glance through your memoranda will reveal the names of some real good out of town prospects.
Inject your personality into the sales force by calling Prospect Jones on the HOME PHONE.
Connections throughout the State, and adjacent territory.
HOME
CENTRAL HOME TELEPHONE & TELEGRAPH CO.

Fig. 80. Another Blotter Booster of Long Distance Business.

by other Independent companies in the territories they serve. Note the prominence of the Independent Shield.

A blotter used by the Central Home Telephone & Telegraph Co., of Louisville, Ky., is reproduced in Fig. 80. The argument set forth is unusually good and we dare say the use of this blotter was instrumental in boosting long distance business.

Gentlemen:

We should like to call your attention to the money-saving and time-economizing long distance telephone service rendered by this company.

Many business men of this community, who used to travel to out-of-town points on business matters, now use our long distance lines. They settle their deals in ten minutes where it used to take them half a day or perhaps longer. They save money and they stay in their offices all the time.

The next time you are contemplating an out-of-town trip, suppose you lift the receiver of your telephone and ask for "long distance." The long distance operator will give you all the information required regarding out-of-town calls and will do so gladly—without obligating you in any way to complete the call unless you desire to do so.

In these days of efficiency, when every man is struggling to crowd into each day all he can possibly do, the long distance telephone is of great assistance. In less time than it would take him to travel to one town, he can talk to a dozen. And perhaps a dozen long distance calls will not cost him as much as railroad fare to the one town.

Our business purpose is to serve our subscribers, and we should like very much to be afforded a broader opportunity to serve you. Use the long distance.

Yours truly,

Fig. 81. Circular Letter for Boosting Long Distance Business.

95. *Business Rather Than Social Purposes the Main Inducement for Use of Long Distance.*—It will undoubtedly prove true for a good many years that the most extensive use of long distance lines will be for business purposes rather than for family or social purposes. In other words, a big majority of long distance calls will originate in business houses rather than in residences. Consequently, the most profitable way to go after long distance business, would seem to be through circularizing business houses either with blotters, circulars, or form letters. The wording of Fig. 81 may furnish inspiration for a letter to be sent out to business subscribers.

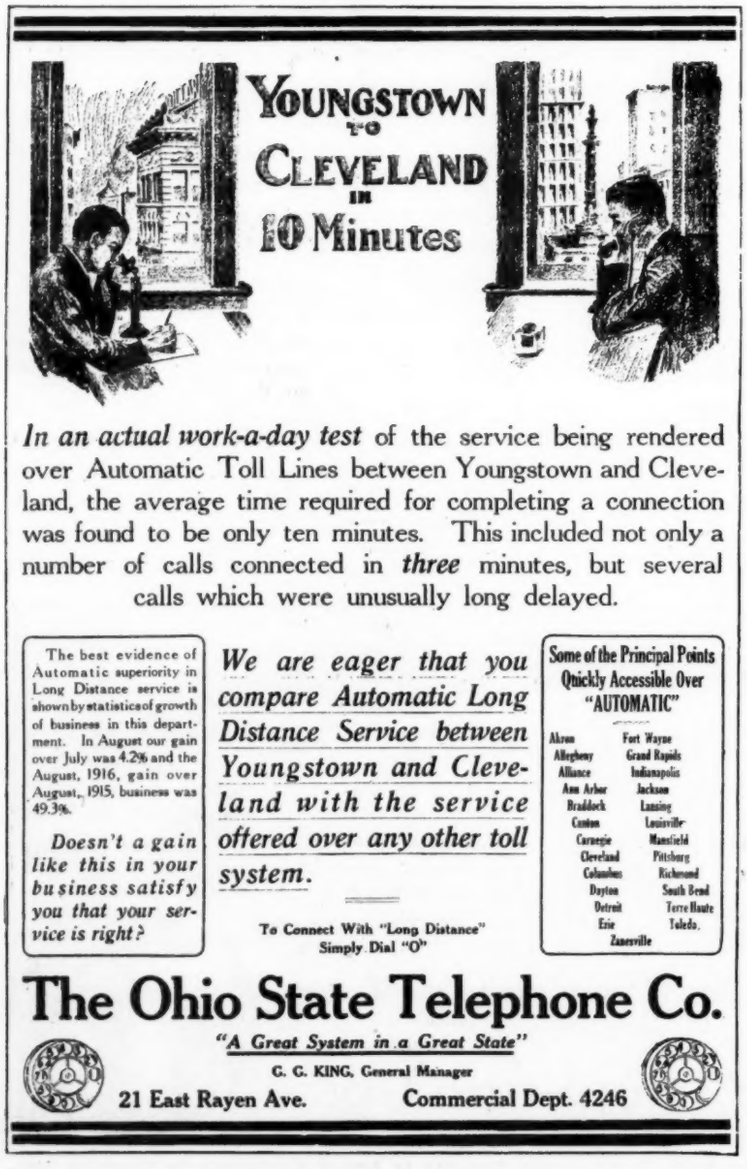

YOUNGSTOWN TO CLEVELAND IN 10 Minutes
In an actual work-a-day test of the service being rendered over Automatic Toll Lines between Youngstown and Cleveland, the average time required for completing a connection was found to be only ten minutes. This included not only a number of calls connected in three minutes, but several calls which were unusually long delayed.
The best evidence of Automatic superiority in Long Distance service is shown by statistics of growth of business in this department. In August our gain over July was 4.2% and the August, 1916, gain over August, 1915, business was 49.3%.
Doesn't a gain like this in your business satisfy you that your service is right?
We are eager that you compare Automatic Long Distance Service between Youngstown and Cleveland with the service offered over any other toll system.
To Connect With "Long Distance" Simply Dial "O"
Some of the Principal Points Quickly Accessible Over "AUTOMATIC"
Akron
Allegheny
Alliance
Ann Arbor
Braddock
Canton
Carnegie
Cleveland
Columbus
Dayton
Detroit
Erie
Fort Wayne
Grand Rapids
Indianapolis
Jackson
Lansing
Louisville
Mansfield
Pittsburg
Richmond
South Bend
Terre Haute
Toledo
Zanesville
The Ohio State Telephone Co.
"A Great System in a Great State"
G. G. KING, General Manager
21 East Rayen Ave.
Commercial Dept. 4246

Fig. 82. Specificness Resulted in 300 Per Cent. Business Increase.

96. *Example of Specific Advertising of Long Distance Service.*—At several points in this series of articles attention has been directed to the increased strength of an advertisement when it deals with specific rather than general matters. To be specific is to pound home some one fact, while to be general is to scatter one's ammunition. It always puts a company in a stronger position to have its patrons remember it by some one predominating fact than for them to have a dim and hazy idea of three or four such facts.

To corroborate this statement, study the advertisement of the Ohio State Telephone Co., reproduced in Fig. 82, which appeared in the Youngstown daily papers of September 19. This advertisement makes just one point—that in talking between Youngstown and Cleveland, the Ohio State lines should be used. We have the word of Rollo R. Stevens, general commercial superintendent of the company, that as a result of this advertisement the Youngstown-Cleveland business increased the following day more than 300 per cent., and has held above 300 per cent. every working day for at least three weeks following.

97. *Specificness in Advertisement Also Brings General Toll Business Increase.*—As an entirely ad-

ditional effect, the company's Youngstown-Pittsburgh business increased more than 100 per cent., while long distance business to the other points mentioned in the advertisement also showed a very pleasing increase.

We dare say that an advertisement by the Ohio State Telephone Co., to the effect that it was prepared to supply long distance service to practically any Ohio point might have had some value. But certainly it would not have produced the remarkable showing that this advertisement with its specific appeal has produced. If a company is particularly strong in its long distance service to certain towns, advertise that fact. If you can get people to use your lines when they talk to Smithville, the chances are they will also use your lines when they talk to Jonesville. *(To be Continued.)*

Practical Subjects—Letters and Discussions

"Telephony's" Home Course for Telephone Men.
(Not meant for study.)
By Well Clay.

In these halcyon days when the sumacs blaze
And the grass turns russet brown;
When the grain is in the farmer's bin
And the dying leaves fall down.

When the hunters shoot the humble "coot,"
If the toothsome duck they miss,
And the bull frog hops when the mercury drops
To his winter's mud—and bliss.

When the ploughin's done and the morning sun
Is later each day in rising;
When pumpkin pie delights the eye
And stomach most surprising.

The small boys swipe the melons ripe
When the moon hangs low in the west;
And the watch dog growls as the lone wolf howls,
Ere food he starts in quest.

These are the days when the coal men raise
Their prices without any reason:
We've had our fun, the summer's done;
Now we'll shovel coal for a season.

These are the days when we begin to wonder what has become of that long, long summer which we saw ahead of us such a short time ago, and to marvel at the pile of work yet to be done, which we had figured early in the spring would be out of the way by this time.

The lines are not yet all gone over and there is that piece of underground cable, perhaps, which you have been figuring you would have installed before the ground froze. It is yet in the warehouse, or the mine, for all you know at the present time. You have not yet ordered it, for prices have been so steep on cable that you have let one week slip over the next, while waiting for the price to drop.

Perhaps you have yet to trim trees on many miles of line or replace a multitude of cross arms before the fleecy flakes come down. We all have lots of trouble keeping our work up to the mark, let alone getting to an end of it anywhere. It is like the work of the woman in the home—never finished.

Speaking of cable, and its price, I notice that many telephone managers have tried to off-set the high price of copper by cutting out all superfluities in the laying of underground this year. I know of several, in addition to our company, that have just laid it in the ground about three feet deep and covered it up with dirt, without any protection whatever. While a hard winter may put some of it out of commission in spots, yet, as one telephone man told me last week, "with the modern testing apparatus, one can find trouble easily enough. It is no more trouble to dig out a few feet of frozen ground and fix a section of bad cable than it is to pull a whole section from a manhole, through conduits, and draw in a new piece."

This is especially true with small companies which have almost no apparatus for drawing cable in and pulling it out of conduit. Their needs do not grow so rapidly that they are obliged to replace cable underground very often to take care of extra growth of a neighborhood. Hence, unless there is a case of trouble, the cable, once laid and connected up, will be untouched for several years in most instances. We have one piece which has been in the ground for many months without any protection, whatever, and as yet we have had no cases of trouble in it.

The market quotations on cable still seem to hold up strong, and, if we will notice closely, we will see that almost everything else is surely, though in some cases slowly, rising in sympathy. That is, everything except the price of telephone service which in a large majority of cases remains at the same old price, meaning that the price has been materially lowered, so far as real return, as judged by what the money will purchase, is concerned. The 6 per cent. which you used to look upon with pride as a good return to your stockholders at the end of the year for the use of their money, not only seems in danger of being much diminished in purchasing power but stands a noble chance of being wiped out altogether unless many plants trim ship a little to meet the effects of this unexpected squall.

There is no use talking about it, prosperity is mighty hard on the telephone people who sell their service at a stipulated flat price. I think that one factor which keeps things in their present status, is the old and mistaken idea, held by most patrons, that we "rent telephones" instead of "sell service." If we look at the matter from the standpoint of renting telephones, there seems little or no argument to uphold a raise in rates, but, if we merely change the viewpoint a little and convince our patrons that we are selling service—whatever the grade may be—they can easily understand and appreciate our position.

One difficulty in thus getting them to see it from our viewpoint is because the service is not measured out to them as used, but rather by months of elapsed time which the instrument is in the home. Personally, I pay my fluctuating electric light bill without any particular notice because it is charged to me in terms of kilowatts. But my water rent, which has been on a flat basis a good share of the time has been raised twice. Although the raises were small, yet they made me feel just like a patron who has his telephone rental raised from a dollar to a dollar and a quarter.

It seems to me that I would welcome any means of converting my service bills from a flat rate to a measured-service basis. Of course, I know that in the large cities this is done to a large extent, but what I mean is to have a thoroughly practicable way of applying it to rural and small town service. If, for instance, a patron could see a small slip of paper, having the amount of his bill to date upon it, drop out of a slot or emerge from off a roll inside the battery box and slowly unwind from day to day until a certain amount registered would suggest to him that he pay up, he would probably not kick nearly as much, even though his bill yearly was quite a bit larger, than he would under the flat rate.

In the first place, he would see it registering each time and know that he had used the service; and in the second place it would break up that fixed notion that the service should only amount to so much regardless of how much it is used.

There must be no frontier lines in selling telephone service

if you want to get each month just what it is worth. If the service were sold on a measured basis, the sight of a pair of batteries all covered with spots after they had been in service only a few months, would arouse feelings of delight rather than the contrary for it would mean, under these circumstances, that he would owe a larger bill than usual—each call so much, with "rubbering" half price, estimated on a basis of elapsed time.

It is time for the boys with inventive ability, who also possess the much more rare and valuable talent of building their inspirations over in the form of workable machines, to get busy and solve the problem.

APHORISM: Development is our only sure means of defense.

Magneto Central Office Inspections.

By A. W. Field.

While reading the article concerning the "Fosterville Wire Chief" and "The Duties of a Manager of a Small Telephone Exchange," I thought I would write something concerning outlying central office inspections. Being an ardent believer in the general inspection system, similar to that used by the "Fosterville Wire Chief" of TELEPHONY's Home Study Course, perhaps I can give a few helpful suggestions to the beginners, and also a routine of the work which should be accomplished in central offices.

Many offices are only inspected once a year. There is then so much work to be done that it gets to be a drudgery to the inspector and he slights it or omits a lot which could have been done at other times without being at all tedious.

Let's say we will take a competent inspector out to an exchange having two or three hundred subscribers with three or four sections of magneto switchboard. Naturally the inspector's first act is to glance at the switchboard to see how many cords are turned down or have trouble caps over the plugs. He generally can tell if his last work has been satisfactory.

After running his fingers over the top of the board and around the rack to ascertain the amount of dust accumulated, he prepares for work. Taking off the back panels of the board, he gives the equipment a thorough and vigorous blowing out with a pair of hand blowers; that is, the drops, jacks, cord terminals and ring-off drops. With a painter's brush he cleans around the cords, cables, and wires which run down the frame and also along the floor.

Next with long nose pliers touching each terminal of the cable wires on the jacks and drops it is determined whether there are any loose or unsoldered connections. The wires are straightened and left in as neat order as possible. Careless inspectors have a habit of leaving wires sloppy while working around the board. This may eventually cause trouble and certainly doesn't reflect on the inspector's work.

The cords are looked over and observations made to see that no weights rest on the floor and that there is no danger of the cord tips becoming crossed on the cord terminal. The panels are put back promptly so as to keep the dust from the equipment.

Everything on the back of the board being inspected, the inspector proceeds to the front.

An easy, most efficient, and accurate test for the cord circuit is by means of the battery test. This may be had by bridging two side jacks—that is, by connecting the tip and sleeve of one jack, respectively, with the tip and sleeve of the other. Now connect three or four dry cells to a third jack in a like manner, and connect a head or hand telephone by a two-conductor cord to a switchboard plug. This must be inserted into one of the jacks which are bridged, and the two cords to be tested may be placed in the other two corresponding jacks.

Notation should be made on a cord test form or a piece of paper of the defect, if any, in each cord, key, or plug. All the sections should be gone over before beginning to repair. This is not compulsory, but is done by preference as the inspector may have to solder two or three wires in a keyboard and it takes more time and also hinders the operators with their work, if it is done as the equipment is inspected.

In testing cords the inspector should be on the alert for worn bushing or loose tips on the plugs, plug sheaths slipping off, and cords free from noise or frayed at plug sleeve. The keys should be moved sideways, the inspector being on the alert for cut-outs in the talking circuit caused by loose rocker pins or loose connection of cable wires and sticking keys. The ring-off drops may be tested by the generator and the cords by ringing on a magneto bell. The cable wires should be left in a neat and tidy manner.

The plugs may be polished with metal polish on a rag or a prepared cloth. If polish is used, be careful it does not run down inside of the plug sheath. Go over them with a piece of flannel cloth.

One of the most essential things relating to service is the proper working order of the night alarm circuit. Generally inspectors fail to bother with this unless their attention is called to it, and then they usually do not go over the rest of them. Each panel should be wired to a side jack, the lower one preferred, so that by inserting a plug it will cut out the section. By this method each section may be cut off and a test made for the trouble or each panel may be inspected separately.

The calculagraph should be looked at to see if it stamps correctly. Inspect each operator's set to see if its transmission is of the best and that the cords are in good shape.

Next is the inspection of the rack—a very important detail as a lot of trouble can be prevented by a careful inspection. Blow the rack with the bellows, cut out slack or faulty jumpers, see that all connections are soldered and that all heat coils have their slits outward and that the ground side is pulled far forward.

Heat coils should be tested by a buzzer to see if they are short circuited. Few inspectors realize what an important part the heat coil plays in telephony. About three years ago, a sneak current partially destroyed a large exchange in one of the principal Canadian cities and crippled service to thousands of subscribers.

The rack should also be tested for grounded lines and the troubles cleared.

Observe the ringing machine and see that it is not sparking; that its dry cells are in good condition and that it sends out the required amount of current. This applies, generally, to interrupters and pole changers, and not where the ringing circuit is run from the power plant or a generator.

Look at the gravity batteries. See that all connections are properly and tightly made and that the coppers are immersed but not covered with the bluestone. Keep the jars clean so the solution will not creep over the edges.

Inspect the long distance test box and rack or arrester strip and phantom coils, seeing that all wires are soldered.

Inspect the booths and other instruments around the central office. Keep the furniture in good shape and test out the fire equipment.

Educate the operator to handle the cords correctly and also to take pride in the switchboard and equipment so as to keep it looking nice and neat, just as they would if at home.

Last, but not least, remember that your work reflects on the company as well as yourself, and whatever is worth doing at all is worth doing well.

Circular on Electric Units and Standards.

The United States Bureau of Standards, Washington, D. C., has just issued Circular No. 60, entitled "Electric Units and Standards." This publication gives comprehensive and up-to-date information regarding the units and standards in terms of which electric and magnetic measurements are made. It includes the history of the units and the evolution of the definitions upon which the laws on electrical standards are based.

Northern White Cedar Poles

Most Extensively Used Poles

United States Census reports show that Cedar is by far the preferred wood for pole purposes. The last report issued by the Government Census Bureau shows the following purchases made by pole users in this country in the year 1911:

Cedar	2,100,144
Chestnut	693,489
Oak	199,590
Pine	161,690
Cypress	72,995
All others	190,112
	3,418,020

This shows that 61 per cent of all the poles sold in the United States in that year were cedar poles. The records of the **Northern White Cedar Association** show that the great percentage of these cedar poles were **Northern White Cedar.**

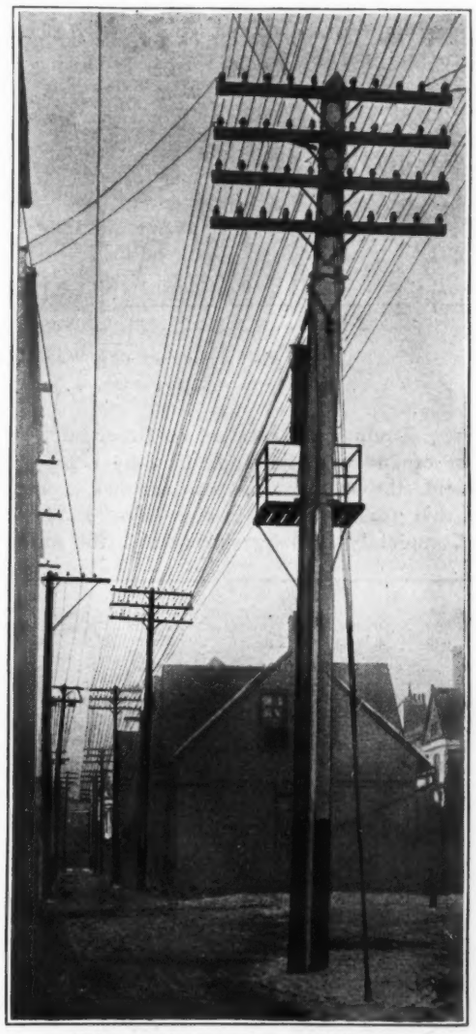
The popularity and the use of **Northern White Cedar** as the pole for all-around pole line purposes is steadily increasing.

Important Advantages

The large butts of **Northern White Cedar Poles** make for strength and stability. Because of their light weight, the transportation cost and the installation cost is low. In this important particular **Northern White Cedar Poles** offer a big advantage over heavier material with higher freight and labor expense.

Northern White Cedar Poles are non-conductors. On the other hand some other woods used for poles are known to be conductors of electricity under certain conditions. **Northern White Cedar Poles** are the safe poles to work on.

Write for facts about the Long Life of Northern White Cedar Poles.



Chicago Telephone Company's Lines
Alley Construction—South Side, Chicago, Ill.

The Attractive Line

For city lines where attractive appearance must be combined with strength, and in country transmission lines where sturdy, storm-resisting power is necessary, **Northern White Cedar Poles** are being selected above all others as the poles best adapted for such service.

Northern White Cedar Association

Lumber Exchange **MINNEAPOLIS, MINN.**

The laws of this and other countries are given. These laws are in substantial agreement, and the various national bureaus of standards co-operate in maintaining the fundamental standards. The circular gives conversion factors, by means of which measurements may be expressed in any desired unit. The information on electric units and standards had not previously been available in a single publication.

This circular is now ready for distribution and those interested in the subject may obtain a copy free by addressing a request to the Bureau of Standards.

Program for Texas Telephone Owners' Convention.

The Local Owners' Telephone Association of Texas will hold its annual convention at the Metropolitan Hotel in Fort Worth, Texas, on Wednesday and Thursday, October 25 and 26. The program has been announced as follows:

WEDNESDAY MORNING SESSION.

Address of welcome, by Mayor Tyra of Fort Worth.

Response, by A. C. Stuart, Texarkana, Tex.

Address, by President C. L. Alderman, of Big Spring.

Reports of secretary and various committees.

WEDNESDAY AFTERNOON SESSION.

Discussion on taxation, led by F. W. Greber, Brownwood, Tex.

Discussion on suitable working conditions for female labor, and minimum wages for female labor, opened by A. J. Combs, of Haskell.

"Governmental Regulations," by A. C. Stuart, Texarkana, and S. P. Harbin, of Richardson.

THURSDAY MORNING SESSION.

"High Cost of Material," by J. Y. Rust, of San Angelo. General discussion on the subject.

THURSDAY AFTERNOON SESSION.

Election of officers.

Reports of special committees and general business.

Following the meeting Wednesday evening, a banquet will be served at the Metropolitan Hotel. Some form of entertainment is also being arranged for Thursday evening by the entertainment committee.

From Factory and Salesroom

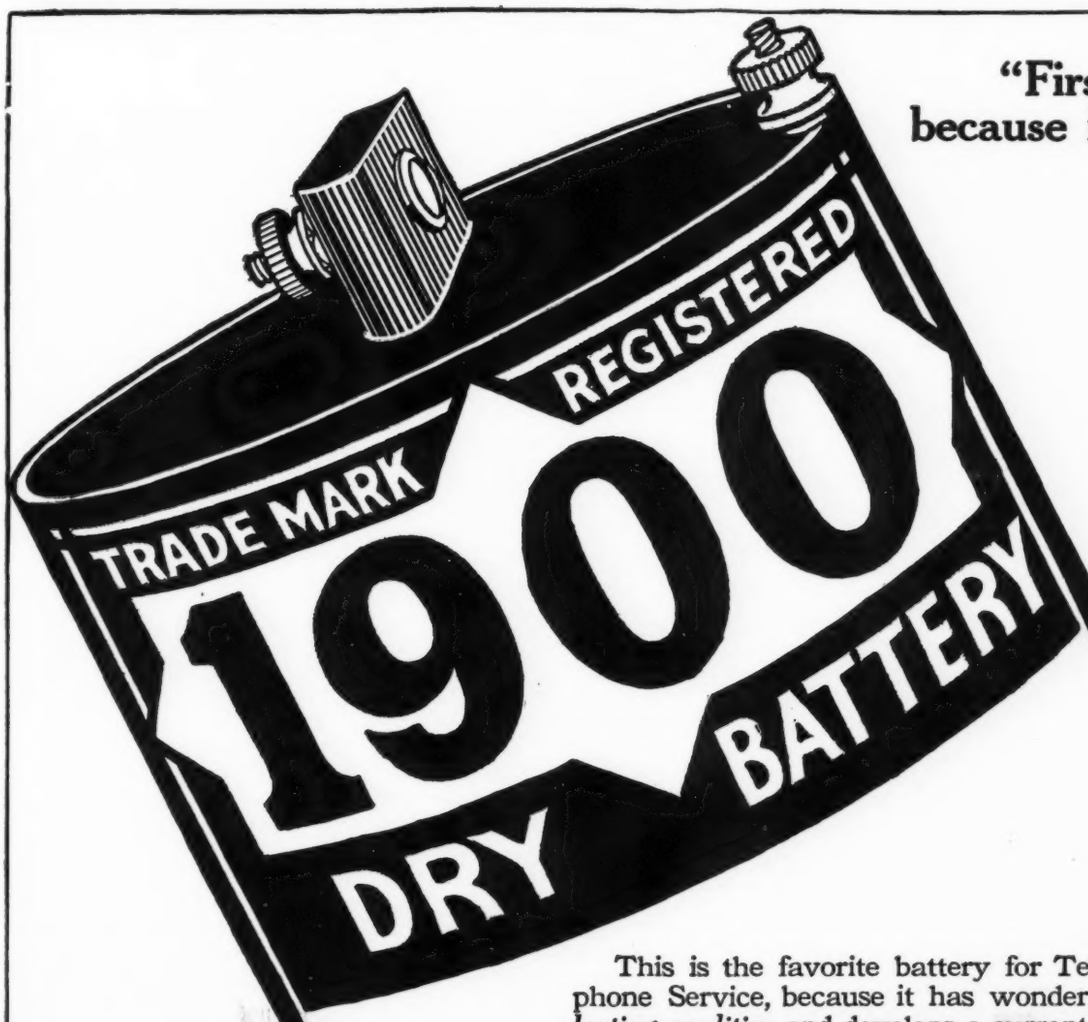
Conventions: Illinois, Springfield, Nov. 15-17; Canadian, Toronto, Nov. 22-23; Ohio, Columbus, Nov. 23-24; U. S. Association, Chicago, Dec. 5-8; Kansas, Topeka, Dec. 19-21; Minnesota, St. Paul, Jan. 23-25; Wisconsin, Madison, Feb. 6-8; Oklahoma, Oklahoma City, Feb. 19-20; Iowa, Des Moines, March 13-15

Kellogg Equipment Installed at Greenfield, Ind.

Just east of Indianapolis, Ind., lies the prosperous city of Greenfield, the county seat of Hancock county. The people of this progressive little city enjoy good telephone service. Completely Kellogg throughout, the exchange of the Morrison Telephone Co., offers to its patrons, service said to be unequalled in many a larger city.

The board, which is shown in the accompanying illustration, consists of three two-position, quarter-sawed oak sections and a cable turning panel. The present equipment

Operating Room of the Morrison Telephone Co., Greenfield, Ind., Showing New Kellogg Instantaneous Recall Switchboard.



"First—
because it lasts"

For telephone service

This is the favorite battery for Telephone Service, because it has wonderful *lasting qualities* and develops a current of uniform strength.

The *reliability* of the 1900 Battery has been established by the test of years in thousands of exchanges throughout the country.

Because of its unusual length of life the 1900 is an *economical* battery as well as a trouble-saver.

Ask anybody who has been using it.

NUNGESSER
CARBON & BATTERY WORKS
OF NATIONAL CARBON CO.
CLEVELAND, OHIO

Our booklet, "Sparks of Genius" explains how we put the *extra* service into the 1900 Battery.
Write us for free copy.

Nungesser
Carbon &
Battery Works
of National Carbon Co.
Cleveland, Ohio
Please send me your booklet
"Sparks of Genius"

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includes 700 local, 40 rural and 25 toll lines. All of the toll and rural lines are located in the first two positions, together with 15 universal cord circuits, which automatically adapt themselves to any class of service whether it be toll to toll, toll to local or local to local.

In the second position are also located 400 multiple jacks from the lines in the fourth position, enabling the toll and rural operator to reach any line in the exchange. All of the 700 lines appear in the third and fourth positions and again in the fifth and sixth positions.

With this arrangement any incoming call appears not only in one place, but within reach of every operator at the board, insuring prompt and efficient service. This is only one of the many features of this equipment. The automatic recall, instantaneous disconnect, secret service, automatic listening, automatic ringing and peg count features all aid in the perfection of this service.

A duplicate set of harmonic ringing machines insures excellent service to those desiring four-party telephones. The ringing is entirely automatic, being taken care of by a set of Kellogg ringing interrupters.

The new installation includes handsome wire chief's and chief operator's desks of the sanitary type.

J. T. Detchon is president and Wm. McCrea, secretary and manager of this progressive company.

Paragraphs.

THE GENERAL INSULATE CO., 1008-1014 Atlantic avenue, Brooklyn, N. Y., well known moulders of insulate products and "Hi-heet" specialties, announces the appointment of Bailey-Drake Co., 236 Title Insurance building, Los Angeles, Cal.; 149 New Montgomery street, San Francisco, Cal.; Denham building, Denver, Colo.; Maritime building, Seattle, Wash., as its agent in that section.

TEMPLETON, KENLY & CO., Chicago, have issued bulletin 216, on Simplex jacks. The use of these jacks in pulling telephone poles and for industrial purposes is shown.

Phoney Bill and Stromberg-Carlson Literature.

In the accompanying illustration is reproduced a portion of the October blotter calendar which is now being sent out by the Stromberg-Carlson Telephone Mfg. Co., of Rochester, N. Y. Phoney Bill believes in keeping himself informed upon

"You'll Find it in Stromberg-Carlson Bulletins," Says Phoney Bill.

the new Stromberg-Carlson literature and in the illustration, he is shown looking over the new No. 1010 Stromberg-Carlson bulletin on central energy telephones. Any company that has not received a copy of this bulletin may obtain one upon request.

Any one desiring to receive the Phoney Bill blotter regularly can have his name placed upon the mailing list by simply making mention of the fact the next time he writes to the Stromberg-Carlson company.

Vice-President of Templeton Kenly & Co.

H. W. Finnell was recently elected vice-president of Templeton Kenly & Co., Ltd., Chicago, manufacturers of Simplex jacks, assuming his duties with that company October 1. "Harry" Finnell, as he is familiarly known to his hosts of friends, has been a prominent figure in railway supply circles for over ten years. Just prior to his present affiliation he was general manager of the Henry Giessel Co. in which concern he will still retain his interests.

H. W. Finnell.

Templeton Kenly & Co., Ltd., have for years confined themselves solely to the manufacture of jacks for industrial and railroad purposes but recently entered the automobile accessory field with the result that Simplex automobile jacks are now part of the standard equipment of a number of high grade pleasure cars and motor trucks. The 318 Simplex jack for pulling and straightening polls has in the last year become well known to telephone men.

Mr. Finnell's genial personality and wide acquaintance in industrial circles make him particularly well qualified for his new work and hearty felicitations for his success are extended him by his many friends and former associates.

Book Review.

HOW TO LOCATE YOUR TELEPHONE TROUBLES, by J. B. Hecht. Published by E. C. Kast, McKnight building, Minneapolis, Minn.; 67 pages; 46 illustrations. Price 75 cents, postpaid.

This is a small book intended for the beginner, the practical man in the local battery exchange and the man in charge of rural line companies. The author, who is assistant chief engineer of the Tri-State Telephone & Telegraph Co., of St. Paul, Minn., has had 22 years of practical and technical experience in the telephone field with both Independent and Bell companies and has written the book from the viewpoint of the practical man.

Switchboard and local and rural line circuits are so described that the beginner can follow the text without difficulty, while the assembling of the information relative to the locating and clearing of trouble in such available form, makes a strong appeal to the man who looks after the maintenance and trouble in magneto exchanges.

The topics which are discussed in this book include: Magneto switchboard circuits and the troubles to be found in them, such as cross talk, cut-offs, subscriber ringing and listening troubles, etc.; wall and desk type magneto telephones in town and city service and a partial list of troubles to which they are subject; rural telephones and their protection from lightning, which is followed by rural line troubles and their location; ringing machines; primary batteries; phantom circuits and coils; and the lineman's test set and method of testing for trouble.

There is no question that the man in the small local battery exchange will find the book of considerable value in his work.